

**Notice of Allowability**

Application No.

10/716,186

Examiner

LUU MATTHEW

Applicant(s)

MOFFITT ET AL.

Art Unit

2676

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the request for changing the address filed December 29, 2004.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

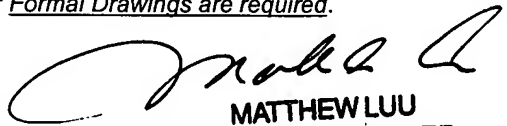
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Formal Drawings are required.

  
**MATTHEW LUU**  
**PRIMARY EXAMINER**

### ***Reasons for Allowance***

The following is an examiner's statement of reasons for allowance:

None of the prior art made of record teaches or suggests a method of processing a primitive for potential display on a display device having a plurality of pixels, the method comprising:

determining if the primitive intersects at least a predetermined number of pixel fragments on the display device, the predetermined number being no less than one; and

culling the primitive as a function of whether the primitive intersects at least the predetermined number of pixel fragments on the display device, the primitive not being raster processed if culled.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-The closest prior art, Duluk, JR. et al (US 2002/0196251) disclose a method and apparatus for culling in a graphics processor including the subpixel cull operation, which takes the remaining primitives (which are partly or entirely visible), and determines the visible fragments. Duluk, JR. et al further disclose (Fig. 14) the Z cull unit (9012) determines whether a primitive covers a particular sample point (i) by comparing the

sample point x coordinate,  $X_{sample}$ , with the  $X_{leftSub}$ , and  $X_{rightSub}$ , values computed by the Subrasterizer. However, Duluk, JR. et al fail to disclose the claimed "culling the primitive as a function of whether the primitive intersects at least the predetermined number of pixel fragments on the display device, the primitive not being raster processed if culled."

-Huang (US 2004/0196281) discloses (Fig. 1) how data parameters for graphics primitives such as triangles not being processed can be rejected or culled prior to transfer on the data pipeline. However, Huang fails to disclose the claimed "culling the primitive as a function of whether the primitive intersects at least the predetermined number of pixel fragments on the display device, the primitive not being raster processed if culled."

-Greene (6,636,215) discloses rendering a scene with box culling for maximizing culling efficiency and minimizing computation and memory traffic (column 11, lines 65-67).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUU MATTHEW whose telephone number is (703) 305-4850. The examiner can normally be reached on Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BELLA MATTHEW can be reached on (703) 308-6829. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Luu

A handwritten signature in black ink, appearing to read 'Matthew Luu', with a large, stylized initial 'M'.

**MATTHEW LUU**  
**PRIMARY EXAMINER**